

H1133

0054589

Thermo Retec  
W.O. No. R0-11-088-7557

Bechtel Hanford Inc.  
SDG H1133 - Revision 01

Case Narrative

Page 1 of 1

## 1.0 GENERAL

Bechtel Hanford Inc. (BHI) Sample Delivery Group H1133 was composed of one water sample designated under SAF No. B99-012 with a Project Designation of: Aquifer Tube Sampling.

The sample was received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Thermo Retec Sample Receipt Checklist. The results were transmitted to BHI via e-Fax on December 21, 2000.

## 2.0 ANALYSIS NOTES

### 2.1 Tritium Analyses

No problems were encountered during the course of the analyses.

RECEIVED  
MAR 28 2001

EDMC

### Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Melissa Mannion  
Melissa C. Mannion  
Program Manager

01/03/01  
Date

**TMA/RICHMOND**  
**SAMPLE DELIVERY GROUP H1133**

SDG 7557  
Contact Melissa C. Mannion

**SAMPLE SUMMARY**

Client Hanford  
Contract TRC-SBB-207925  
Case no SDG H1133

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB SAMPLE ID	SAF NO	CHAIN OF CUSTODY	COLLECTED
B10MNO	100-D/DR, DD-50-2	WATER		R011088-01	B99-012	B99-012-151	11/07/00 12:03
Method Blank		WATER		R011088-03	B99-012		
Lab Control Sample		WATER		R011088-02	B99-012		
Duplicate (R011088-01)	100-D/DR, DD-50-2	WATER		R011088-04	B99-012		11/07/00 12:03
Spike (R011088-01)	100-D/DR, DD-50-2	WATER		R011088-05	B99-012		11/07/00 12:03

**SAMPLE SUMMARY**

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**SUMMARY DATA SECTION**

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Lab id TMANC  
Protocol Hanford  
Version Ver 1.0  
Form DVD-CS  
Version 3.06  
Report date 01/02/01

**TMA/RICHMOND**  
**SAMPLE DELIVERY GROUP H1133**

**QC SUMMARY**

SDG 7557  
 Contact Melissa C. Mannion

Client Hanford  
 Contract TRC-SBB-207925  
 Case no SDG H1133

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7557	899-012-151	B10MNO	WATER				11/08/00	1	R011088-01	7557-001
		Method Blank	WATER						R011088-03	7557-003
		Lab Control Sample	WATER						R011088-02	7557-002
		Duplicate (R011088-01)	WATER				11/08/00	1	R011088-04	7557-004
		Spike (R011088-01)	WATER				11/08/00	1	R011088-05	7557-005

QC SUMMARY

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SUMMARY DATA SECTION

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Lab id TMANC  
 Protocol Hanford  
 Version Ver 1.0  
 Form DVD-QS  
 Version 3.06  
 Report date 01/02/01

**TMA/RICHMOND**  
**SAMPLE DELIVERY GROUP H1133**

SDG 7557  
 Contact Melissa C. Mannion

**PREP BATCH SUMMARY**

Client Hanford  
 Contract TRC-SBB-207925  
 Case no SDG H1133

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED						QUALIFIERS
			BATCH	2σ %	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	
Liquid Scintillation Counting											
H	WATER	Tritium in Water	6962-089	10.0	1			1	1	1/1	1/1

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.  
 Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

Lab id TMANC  
 Protocol Hanford  
 Version Ver 1.0  
 Form DVD-PBS  
 Version 3.06  
 Report date 01/02/01

**TMA/RICHMOND**  
**SAMPLE DELIVERY GROUP H1133**

**WORK SUMMARY**

SDG 7557  
 Contact Melissa C. Mannion

Client Hanford  
 Contract TRC-SBB-207925  
 Case no SDG H1133

CLIENT SAMPLE ID		LAB SAMPLE ID								
LOCATION	MATRIX	COLLECTED	PLANCHET	TEST	SUF-	ANALYZED	REVIEWED	BY	METHOD	
CUSTODY	SAF No	RECEIVED			FIX					
B10MNO		R011088-01	7557-001	H		12/08/00	01/02/01	MCM	Tritium in Water	
100-D/DR, DD-50-2	WATER	11/07/00								
B99-012-151	B99-012	11/08/00								
Method Blank	WATER	R011088-03	7557-003	H		12/09/00	01/02/01	MCM	Tritium in Water	
	B99-012									
Lab Control Sample	WATER	R011088-02	7557-002	H		12/09/00	01/02/01	MCM	Tritium in Water	
	B99-012									
Duplicate (R011088-01)	WATER	R011088-04	7557-004	H		12/09/00	01/02/01	MCM	Tritium in Water	
100-D/DR, DD-50-2		11/07/00								
	B99-012	11/08/00								
Spike (R011088-01)	WATER	R011088-05	7557-005	H		12/09/00	01/02/01	MCM	Tritium in Water	
100-D/DR, DD-50-2		11/07/00								
	B99-012	11/08/00								

**COUNTS OF TESTS BY SAMPLE TYPE**

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
H	B99-012	Tritium in Water	906.0_H3_LSC	1			1	1	1	1	5
TOTALS				1			1	1	1	1	5

WORK SUMMARY

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SUMMARY DATA SECTION

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Lab id TMANC  
 Protocol Hanford  
 Version Ver 1.0  
 Form DVD-CWS  
 Version 3.06  
 Report date 01/02/01

### Method Blank

## METHOD BLANK

SDG <u>7557</u>	Client/Case no <u>Hanford</u>	SDG <u>H1133</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>TRC-SBB-207925</u>	
Lab sample id <u>R011088-03</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7557-003</u>	Material/Matrix _____	<u>WATER</u>
	SAF No <u>B99-012</u>	

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Tritium	10028-17-8	4.69	220	370	400	U	H

## Aquifer Tube Sampling

QC-BLANK 36769

## R011088-02

**Lab Control Sample**

SDG 7557  
Contact Melissa C. Mannion

Client/Case no Hanford SDG H1133

Case no TRC-SBB-207925

Lab sample id R011088-02

Client sample id	Lab Control Sample
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
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19	19
20	20
21	21
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23	23
24	24
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89	89
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94	94
95	95
96	96
97	97
98	98
99	99
100	100

Dept sample id 7557-002

Material/Matrix	WATER
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SAF No B99-012

### Aquifer Tube Sampling

**LAB CONTROL SAMPLES**

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## SUMMARY DATA SECTION

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Lab id TMANC

Protocol HanfordVersion Ver 1.0Form DVD-LCS

Version 3.06

Report date 01/02/01

**TMA/RICHMOND**  
**SAMPLE DELIVERY GROUP H1133**

R011088-04

B10MNO

**DUPLICATE**

SDG <u>7557</u>		Client/Case no <u>Hanford</u> <u>SDG H1133</u>	
Contact <u>Melissa C. Mannion</u>		Case no <u>TRC-SBB-207925</u>	
DUPLICATE		ORIGINAL	
Lab sample id <u>R011088-04</u>	Lab sample id <u>R011088-01</u>	Client sample id <u>B10MNO</u>	
Dept sample id <u>7557-004</u>	Dept sample id <u>7557-001</u>	Location/Matrix <u>100-D/DR, DD-50-2</u> <u>WATER</u>	
	Received <u>11/08/00</u>	Collected <u>11/07/00 12:03</u>	
		Custody/SAF No <u>B99-012-151</u> <u>B99-012</u>	

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI- FIERS	RPD %	3σ TOT	PROT LIMIT
Tritium	22100	470	190	400		H	22100	480	190		0	22	

Aquifer Tube Sampling

QC-DUP#1 36770

DUPLICATES

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SUMMARY DATA SECTION

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Lab id TMANC  
 Protocol Hanford  
 Version Ver 1.0  
 Form DVD-DUP  
 Version 3.06  
 Report date 01/02/01



**TMA/RICHMOND**  
**SAMPLE DELIVERY GROUP H1133**

R011088-05

B10MN0

**MATRIX SPIKE**

SDG <u>7557</u>		Client/Case no <u>Hanford</u> <u>SDG H1133</u>	
Contact <u>Melissa C. Mannion</u>		Case no <u>TRC-SBB-207925</u>	
MATRIX SPIKE		ORIGINAL	
Lab sample id <u>R011088-05</u>	Lab sample id <u>R011088-01</u>	Client sample id <u>B10MN0</u>	
Dept sample id <u>7557-005</u>	Dept sample id <u>7557-001</u>	Location/Matrix <u>100-D/DR, DD-50-2</u> <u>WATER</u>	
	Received <u>11/08/00</u>	Collected <u>11/07/00 12:03</u>	
		Custody/SAF No <u>B99-012-151</u> <u>B99-012</u>	

ANALYTE	SPIKE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS TEST	ADDED pCi/L	2σ ERR pCi/L	ORIGINAL pCi/L	2σ ERR (COUNT)	REC 3σ % (TOTAL)	LNTS LIMITS	PROTOCOL
Tritium	41700	670	200	400	H	21000	840	22100	480	93	65-135	60-140

Aquifer Tube Sampling

QC-MS#1 36771

MATRIX SPIKES

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SUMMARY DATA SECTION

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Lab id <u>TMANC</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-MS</u>
Version <u>3.06</u>
Report date <u>01/02/01</u>

TMA / RICHMOND  
SAMPLE DELIVERY GROUP H1133

R011088-01

B10MNO

DATA SHEET

SDG <u>7557</u>	Client/Case no <u>Hanford</u>	SDG <u>H1133</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>TRC-SBB-207925</u>	
Lab sample id <u>R011088-01</u>	Client sample id <u>B10MNO</u>	
Dept sample id <u>7557-001</u>	Location/Matrix <u>100-D/DR, DD-50-2</u>	<u>WATER</u>
Received <u>11/08/00</u>	Collected <u>11/07/00 12:03</u>	
	Custody/SAF No <u>B99-012-151</u>	<u>B99-012</u>

ANALYTE	CAS NO	RESULT pCi/L	2 $\sigma$ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Tritium	10028-17-8	22100	480	190	400		H

Aquifer Tube Sampling

**TMA/RICHMOND**  
SAMPLE DELIVERY GROUP H1133

Test H Matrix WATER  
SDG 7557  
Contact Melissa C. Mannion

**METHOD SUMMARY**  
TRITIUM IN WATER  
LIQUID SCINTILLATION COUNTING

Client Hanford  
Contract TRC-SBB-207925  
Contract SDG H1133

**RESULTS**

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- PLANCHET	Tritium
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Preparation batch 6962-089

B10MNO	R011088-01	7557-001	22100
BLK (QC ID=36769)	R011088-03	7557-003	U
LCS (QC ID=36768)	R011088-02	7557-002	ok
Duplicate (R011088-01)	R011088-04	7557-004	ok
Spike (R011088-01)	R011088-05	7557-005	ok

Nominal values and limits from method RDLs (pCi/L) 400  
Aquifer Tube Sampling

**METHOD PERFORMANCE**

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- pCi/L	MDA	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT keV	DAYS HELD	ANAL- PREPARED	YZED	DETECTOR
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Preparation batch 6962-089 2σ prep error 10.0 % Reference Lab Notebook 6962 pg. 089

B10MNO	R011088-01	190	0.0500	20	100	31	12/07/00	12/08	LSC-005
BLK (QC ID=36769)	R011088-03	370	0.0500	10	100	12/07/00	12/09	LSC-005	
LCS (QC ID=36768)	R011088-02	360	0.0500	10	100	12/07/00	12/09	LSC-005	
Duplicate (R011088-01)	R011088-04	190	0.0500	20	100	32	12/07/00	12/09	LSC-005
(QC ID=36770)									
Spike (R011088-01)	R011088-05	200	0.0500	18	100	32	12/07/00	12/09	LSC-005
(QC ID=36771)									

Nominal values and limits from method 400 0.0500 25 180

PROCEDURES REFERENCE 906.0\_H3\_LSC  
CP-210 Tritium in Water Samples by Distillation, rev 3

AVERAGES ± 2 SD MDA 260 ± 190  
FOR 5 SAMPLES YIELD 16 ± 10

**METHOD SUMMARIES**

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**SUMMARY DATA SECTION**

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Lab id TMANC  
Protocol Hanford  
Version Ver 1.0  
Form DVD-CMS  
Version 3.06  
Report date 01/02/01

<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>B99-012-151</b>		<b>Page 1 of 1</b>	
Collector M. Baechler/J. Cowgill		Company Contact Bob Raidl		Telephone No. 372-9585		Project Coordinator TRENT, SJ		Price Code 7L      Data Turnaround 45 Days	
Project Designation Aquifer Tube Sampling		Sampling Location 100-D/DR, DD-50-2      H1133 (7557)		SAF No. B99-012		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC-00-010 (1 of 1)		Field Logbook No. EL-1519		COA H10COM351C		Method of Storage Hand Delivered		FED EX	
Shipped To TMA/RECRA		Offsite Property No. A010027		Bill of Lading/Air Bill No. 42357953 - 0419					
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation		None			
				Type of Container		P			
				No. of Container(s)		1			
				Special Handling and/or Storage		Volume		250mL	
SAMPLE ANALYSIS				Tritium - H3					
Sample No.		Matrix *		Sample Date		Sample Time			
B10MNO		WATER		11/7/00		1203/		X/	
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix * S=Soil SE=Soil/Sediment SD=Solid S=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tram WT=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By		Date/Time		Received By		Date/Time			
M. Baechler		11/7/00 1340		R. J. 2B 3728		11/01/00			
Relinquished By		Date/Time		Received By		Date/Time			
R. J. 2B 3728		11/8/00		R. J. 2B 3728		11/8/00			
Relinquished By		Date/Time		Received By		Date/Time			
R. J. 2B 3728		11/8/00		FED EX		11/08/00			
Relinquished By		Date/Time		Received By		Date/Time			
FED. EXPRESS		11/09/00		E. J. 2B 3728		11/09/00			
Relinquished By		Date/Time		Received By		Date/Time			
Relinquished By		Date/Time		Received By		Date/Time			
LABORATORY SECTION		Received By		Title				Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time	

SAMPLE RECEIPT CHECKLIST

SAMPLE RECEIPT

Client: BECHTEL HANFORD Date/Time received 11/09/00 10:30 AM

CoC No. B99-012-151

Container I.D. No. ERC-00-010 Requested TAT (Days) 45 P.O. Received Yes ☐ No ☒

INSPECTION

1. Custody seals on shipping container intact? Yes ☒ No ☐ N/A ☐
2. Custody seals on shipping container dated & signed? Yes ☒ No ☐ N/A ☐
3. Custody seals on sample containers intact? Yes ☒ No ☐ N/A ☐
4. Custody seals on sample containers dated & signed? Yes ☒ No ☐ N/A ☐
5. Cooler Temperature: \_\_\_\_\_ Packing material is: Wet ☐ Dry ☒
6. Number of samples in shipping container: 1
7. Number of containers per sample: (1 EACH) (Or see CoC \_\_\_\_\_)
8. Paperwork agrees with samples? Yes ☒ No ☐
9. Samples have: Tape ☐ Hazard labels ☐ Rad labels ☐ Appropriate sample labels ☒
10. Samples are: In good condition ☒ Leaking ☐ Broken Container ☐ Missing ☐
11. Describe any anomalies: \_\_\_\_\_
13. Was P.M. notified of any anomalies? Yes ☐ No ☐ Date \_\_\_\_\_
14. Received by E. Deguro Date: 11/09/00 Time: 10:30 AM

Customer Sample No.	cpm	mr/hr
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Customer Sample No.	Cpm	mr/hr
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Ion Chamber Ser. No. \_\_\_\_\_

Calibration date \_\_\_\_\_

Survey Meter Ser No. \_\_\_\_\_

Calibration date \_\_\_\_\_